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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,674	12/04/2003	Toru Mizutani	09792909-5789	8467

7590 03/22/2007  
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EXAMINER
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GOFF II, JOHN L

ART UNIT	PAPER NUMBER
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1733

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/22/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

# Office Action Summary

Application No.

10/727,674

Applicant(s)

MIZUTANI ET AL.

Examiner

John L. Goff

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 14,26,27 and 29-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14,26,27 and 29-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 09/768,093.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/20/06 has been entered.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### ***Specification***

3. The disclosure is objected to because of the following informalities: On page 1, under "RELATED APPLICATION DATA" line 3 after "filed January 23, 2001" insert - - now U.S. Patent 6,755,873 - -.

Appropriate correction is required.

***Claim Objections***

4. Claims 31 and 32 are objected to because of the following informalities: In claim 31, line 2 after "gel electrolyte" insert - - comprises - -. In claim 32, line 2 delete "the matrix polymer in a" and insert therein - - a matrix polymer in the - - to provide antecedent basis for matrix polymer.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 14, 26, 27, 29-32, 34, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatta et al. (WO 00/26976 with U.S. Patent 6,797,430 used as a translation) in view of JP 01320769 (See also the abstract).

Hatta et al. disclose a method of forming a gel electrolyte battery comprising forming a positive electrode (e.g. strip-like) made up of a positive active material layer (e.g. containing a lithium compound oxide) and a gel electrolyte (e.g. formed from a matrix polymer such as polyacrylonitrile, a non-aqueous solvent such as ethylene carbonate and/or propylene carbonate

Art Unit: 1733

which are solvents having a boiling point at 150 °C or higher, i.e. B/A ratio less than 1 wt. %, and an electrolyte salt), layering the positive electrode with a positive electrode collector (e.g. a metal foil), forming a negative electrode (e.g. strip-like) made up of a negative active material layer (e.g. containing a material capable of doping/undoping lithium) and a gel electrolyte (e.g. formed from a matrix polymer such as polyacrylonitrile, a non-aqueous solvent such as ethylene carbonate and/or propylene carbonate having a boiling point at 150 °C or higher, and an electrolyte salt), layering the negative electrode with a negative electrode collector (e.g. a metal foil), and forming the layered positive electrode and positive electrode collector with the layered negative electrode and negative electrode collector to form a battery device (e.g. coiled longitudinally), accommodating the battery device within a laminated film (e.g. a laminated film including an aluminum foil sandwiched between two resin layers), and applying heat and uniform pressure to the battery device and laminated film through a heat-resistant silicon rubber heated block pressing device (30 of Figure 6) to heat seal the laminated film and form the battery (Figures 1-9 and Column 4, lines 1-16 and 30-38 and Column 5, lines 13-50 and Column 6, lines 28-31 and Columns 8-10). Hatta et al. are silent as to charging and discharging the battery device within the laminated film after an initial sealing step but prior to a final sealing step. JP 01320769 discloses a prior art process for sealing an electrolyte battery device within a container to form an electrolyte battery comprising accommodating the battery device within the container, performing a first/initial sealing step of the battery device within the container, performing a step of charging and discharging the battery device, and then performing a second/final sealing step of the battery device within the container, the process preventing any gases that form during initial charging and discharging of the battery device from deforming the battery device and/or

Art Unit: 1733

container or causing electrolyte leakage (See the abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to perform the heat sealing as taught by Hatta et al. using two sealing steps and a step of charging and discharging the battery device as shown by JP 01320769 to prevent any gases that form during initial charging and discharging of the battery device from deforming the battery device and/or laminated film or causing electrolyte leakage.

Regarding claims 26 and 27, Hatta et al. do not specifically disclose the heat sealing pressure and temperature, it being noted Hatta et al. are not limited to any particular values and Hatta et al. suggest heat-sealing pressures including 960 kPa and melting temperatures of the heat sealed laminated film of 100 °C (See the examples). Absent any unexpected results, it would have been obvious to one of ordinary skill in art at the time the invention was made to experimentally determine the heat sealing pressure and temperature in Hatta et al. as modified by JP 01320769 as a function of the type of materials pressed, the time of pressing, etc. as doing so would have required nothing more than ordinary skill and routine experimentation.

Regarding claim 36, Hatta et al. do not specifically teach including additional positive electrodes and negative electrodes on the free side of the positive electrode carrier and negative electrode carrier. However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the battery device taught by Hatta et al. as modified by JP 01320769 additional positive electrodes and negative electrodes on the free side of the positive electrode carrier and negative electrode carrier to increase the amount of battery storage.

Art Unit: 1733

7. Claims 33 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatta et al. and JP 01320769 as applied to claims 14, 26-32, 34, and 36 above, and further in view of JP 11140209.

Hatta et al. and JP 01320769 as described above teach all of the limitations in claim 33 and 35 except for a teaching of including a porous polyolefin separator between the positive and negative electrodes. JP 11140209 discloses an electrolyte battery including a porous, polyolefin, high strength separator (See the abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in Hatta et al. as modified by JP 01320769 between the positive and negative electrodes a porous polyolefin separator as shown by JP 11140209 to separate the electrodes and form a battery with high strength.

#### ***Terminal Disclaimer***

8. The terminal disclaimer filed on 1/23/07 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent 7,160,415 has been reviewed and is accepted. The terminal disclaimer has been recorded.

#### ***Priority***

9. Applicant cannot rely upon the foreign priority papers to overcome Hatta et al. because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15. It is noted applicants state in the response filed 10/20/06 that a certified English translation of the priority document, JP 10-311482, was filed to overcome Hatta et al. However, the office has not received the translation, and the referred to priority document, JP 10-311482,

Art Unit: 1733

appears to be incorrect. The instant application relies upon foreign priority document, JP 2000-081860. Should applicants perfect the priority of JP 2000-081860 and establish a priority date of March 17, 2000 then the rejections over Hatta et al. (U.S. Patent 6,797,430 having a priority date of December 26, 2000 and/or PCT WO00/26976 having a publication date of May 11, 2000) would be withdrawn. The examiner contacted applicants representative Mr. Brad Kurtz to obtain the certified English translation, but Mr. Kurtz informed the examiner that the translation was currently unavailable and could not be provided before a response was due from the office to the RCE.

***Allowable Subject Matter***

10. Claims 14, 26, 27, and 29-36 would be allowed upon the perfection of applicants foreign priority to overcome Hatta et al. for the following reasons:

The claims would be allowed over Yamazaki et al. (WO 99/40634 with U.S. Patent 6,632,538 used as the English translation) in view of JP 01320769 (See also the English abstract), Kinsman (U.S. Patent 4,069,578) and either one of Takeguchi et al. (U.S. Patent 5,116,440) or Hass et al. (U.S. Patent 5,972,140) in view of applicants amendment and arguments entered 10/20/06, in particular see page 8, first full paragraph and the paragraph spanning pages 8 and 9.

The prior art of record fails to teach or suggest sealing a battery device within a laminated film by heat fusion comprising the method of claim 14 including the steps of “(c) a first heating step of heating said battery device, accommodated in said laminated film in said accommodating step (b), under a uniformly pressed state” and “(f) a second heating step of heating the battery



Art Unit: 1733

device under a uniformly pressured state, said step (f) occurring after step (e)". JP 01320769 discloses sealing a battery device within a can by crimping the exterior edge of the can. There is no teaching or suggestion in JP 01320769 of sealing the battery device within the can by heating the battery device under a uniformly pressed state. Kinsman (U.S. Patent 4,069,578) discloses sealing the layers of a battery device by heating the battery device under a non-uniform pressed state. There is no teaching or suggestion in Kinsman of sealing a battery device accommodated in a laminated film by heating the battery device under a uniformly pressed state.

### ***Response to Arguments***

11. Applicant's arguments filed 10/20/06 have been fully considered but they are not persuasive.

The previous rejection over Yamazaki et al. (WO 99/40634 with U.S. Patent 6,632,538 used as the English translation) in view of JP 01320769 (See also the English abstract), Kinsman (U.S. Patent 4,069,578) and either one of Takeguchi et al. (U.S. Patent 5,116,440) or Hass et al. (U.S. Patent 5,972,140) is withdrawn in view of applicants amendment to require steps (c) and (f) occur under a uniformly pressured state. The previous double patenting rejections are withdrawn in view of the terminal disclaimer filed on 1/23/07. The rejections over Hatta et al. remain as set forth above.

Art Unit: 1733

***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571) 272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



John L. Goff  
Patent Examiner  
Art Unit 1733